

Work Order ID 155571

Tuesday, January 17, 2017 11:27:19 AM

155571

Page 1

Item ID: 647.0113

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Strut Doubler

Start Date: 1/20/2017 Start Qty: 10.00

10

Cust Item ID:

Required Date: 2/10/2017 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: JAN 18 2017

Tooling:

Date:

Run Start

NR1QC: 9-89

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
647.0100	A1								
110		0.02							
110									
Waterjet	Memo	0.05							
FLOW CNC Waterjet	1-Cut as per Dwg Dwg Rev: <u>A1</u> Prog Rev: <u>A1</u>								
	2-Deburr if necessary								
120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120									
QC	Memo	0.02							
Quality Control									

DAS
46
9-89

17/02/01

10

DAS
46
9-89

17/02/01

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause				FAULT CATEGORY			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified	☐	Past Due	☐				

Tuesday, January 17, 2017 11:27:19 AM

Page 2

10x Sp 17 es 21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Work Order ID 155571

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155571

Page 3

Item ID: 647.0113 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Strut Doubler
Start Date: 1/20/2017 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 2/10/2017 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo <i>1.1 mils thickness primer</i>	0.00 0.03				<i>10</i>			<i>DAS</i> <i>38</i> <i>2-88</i> FEB 22 2017
190 *190* Packaging Packaging	Identify as per dwg & Stock Location <i>CK089</i> Memo ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***	0.00 0.02				<i>10</i>			<i>DAS</i> <i>6</i> <i>9-88</i> FEB 23 2017
200 *200* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.17							<i>DAS</i> <i>21</i> <i>9-88</i> FEB 23 2017 <i>MF</i> <i>17-2-23</i>

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Picklist Print

Tuesday, January 17, 2017 11:27:19 AM

Work Order ID: 155571

155571

Parent Item: 647.0113

647 0113

Parent Item Name: Strut Doubler

Start Date: 1/20/2017

Required Date: 2/10/2017

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A 12.08.14 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.125		Purchased	No			110	sf	43.3000	0.318	3.347368			
M2024T3S 125									**				
2024-T3 .125 sheet													

DAS
46
9-89

17/02/01

Location

Loc Qty

Loc Code

MAT021

43.3

M127668

3.7

M136430

39.6

3.1

DQA: _____ Date: _____

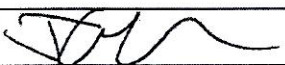
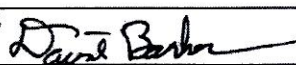
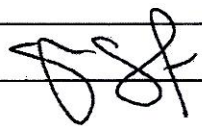


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QA Closed: _____ Date: _____

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Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
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				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

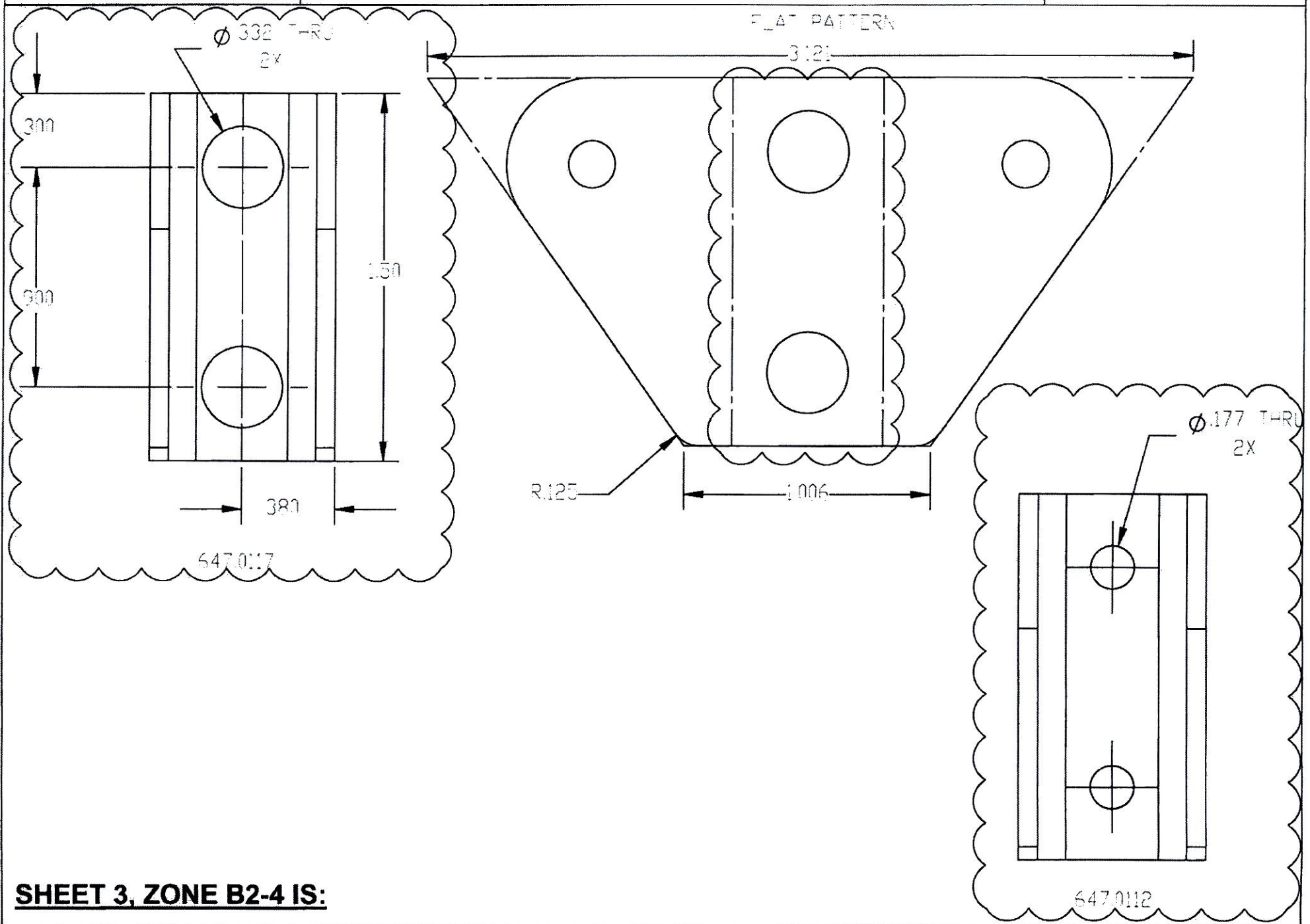
APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03985			SHEET 1 OF 2	
	DWG NO. 647.0100	REV: A	PREPARED BY J. BECKER	DATE: 7/15/13	EFFECT ON DWG ☐ INC. ☒ UNINC.
	DWG TITLE: SHEET METAL				
	APPROVED BY: ENGR 	MFG 	QC 	EFF. NEXT ORDER	
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED NOTE 2. ADDED 647.0117				

- NOTES:
- IS** →
- 1 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4.
 - 2 FINISH: IAW MPP-172 ANODIZE IAW SECTION 2.1, PRETREATMENT IAW SECTION 3.1 AND PRIMER IAW SECTION 4.1.
 - 3. DEBURR AND BREAK ALL SHARP EDGES.
 - 4. IDENTIFY IAW MPP-120.
 - 5 MATERIAL: 304 SS IAW AMS 5643.
 - 6 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N.
 - 7 OTHER DIMENSIONS SAME AS 647.0112.

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 155571 MJS
 1701-18

SHEET 1, ZONE D1 IS:

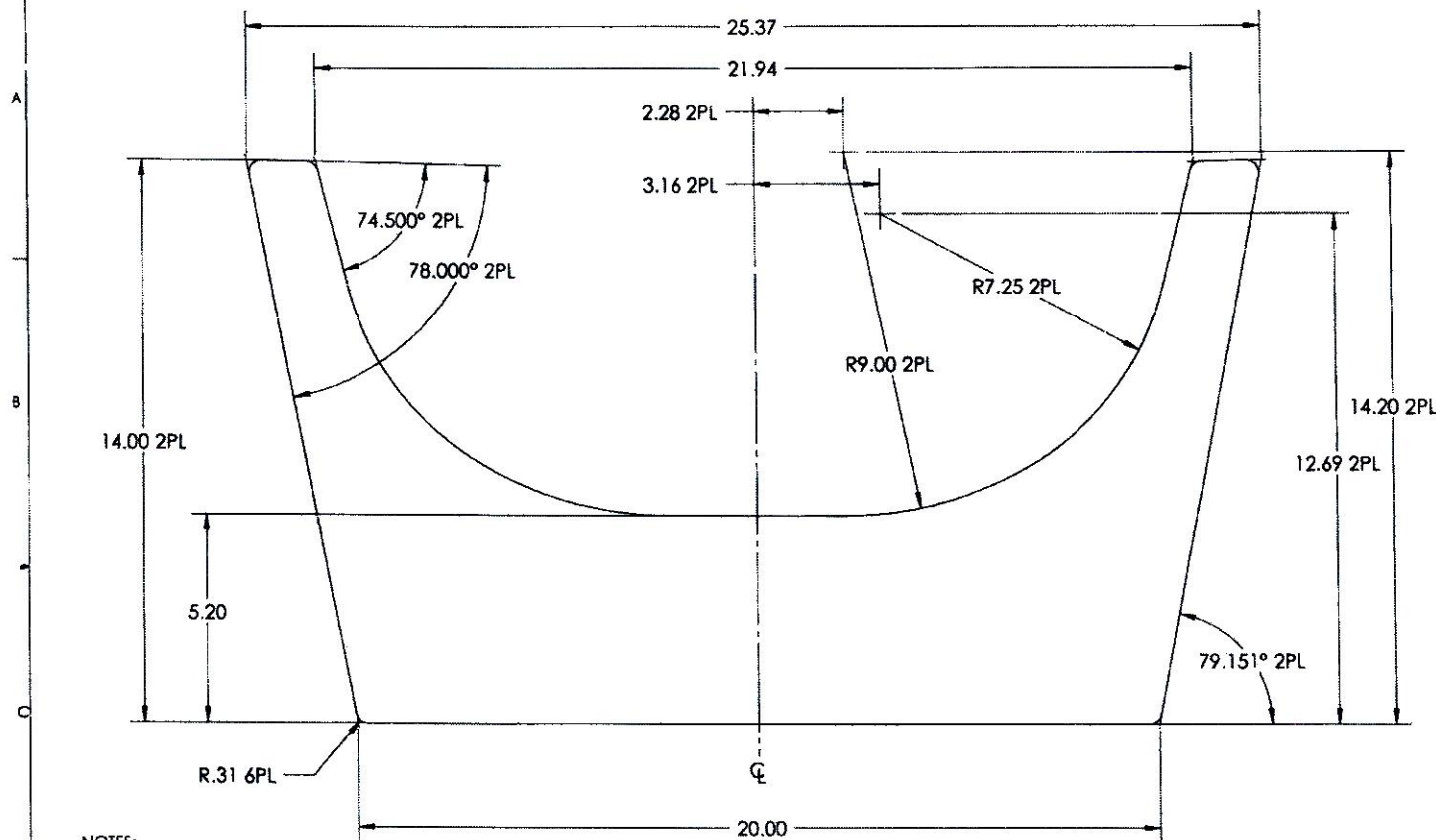
C	647.0117		STRUT BRACKET	△	△
F/NTC	PART NUMBER		DESCRIPTION	MATERIAL	SPECIFICATION
DOCUMENTS EFFECTED:			CHANGE CATEGORY	DER REVIEW REQUIRED	
☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM			☐ MAJOR ☒ MINOR	☐ YES ☒ NO	



SHEET 3, ZONE B2-4 IS:

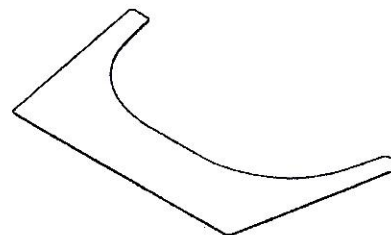
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PRODUCTION REVISION PP2		N/C
N/C	RECALL RELEASE	03/26/09	P. BRAVO
A	INCORPORATED ECN 64777 (2744-5300)	04/08/11	P. BRAVO



NOTES:

- 1 MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; PRETREAT PR-148 ADHESION PROMOTER; PRIME IAW MIL-P-23377J TYPE I CLASS N.
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 MATERIAL: 304 SS IAW AMS 5643.
- 6 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N.



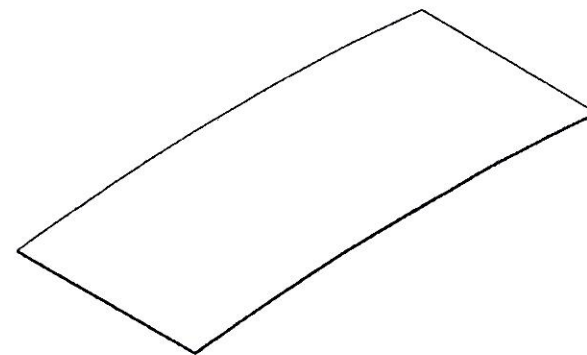
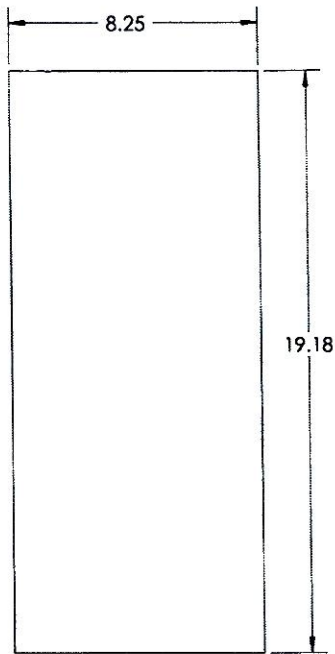
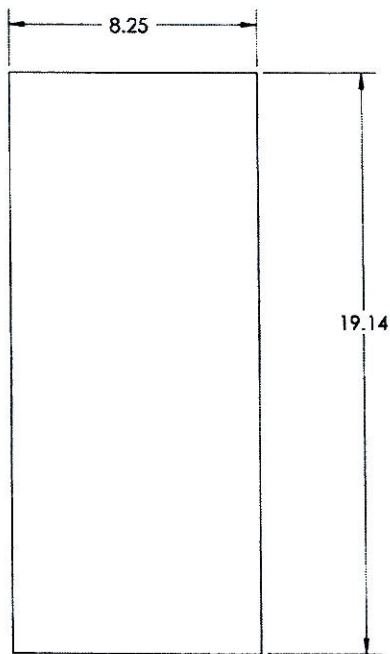
647.0110

UNINCORPORATED ECN(s)

03.985.

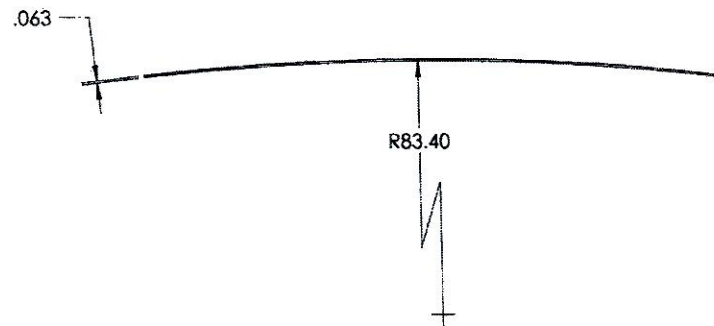
QTY	647.0116	DOUBLER	△	△
	647.0115	CLIP	△	△
	647.0114	CLIP	△	△
	647.0113	STRUT DOUBLER	△	△
	647.0112	STRUT BRACKET	△	△
	647.0111	PANEL	△	△
	647.0110	ROOF DOUBLER	△	△
FIND #	PART #	DESCRIPTION	MATL	SPEC.
PARTS LIST				
APICAL INDUSTRIES				
2608 TEMPLE HEIGHTS DR.				
OCEANSIDE, CA. 92056-3512 (760)724-5300				
SHEETMETAL				
UNLESS OTHERWISE SPECIFIED				
DIMENSIONS ARE IN INCHES				
CONTRACTS ARE				
2 PLACE DECIMALS 2 D.				
ANGLES 1/2°				
SCALE NONE	SHEET	1 OF 6		

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647.0111

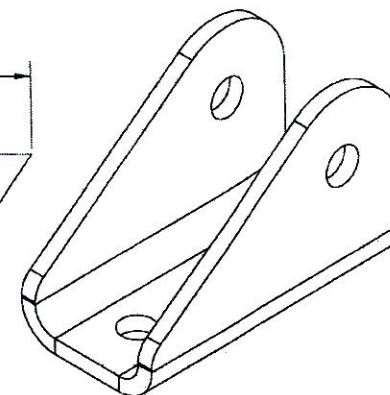
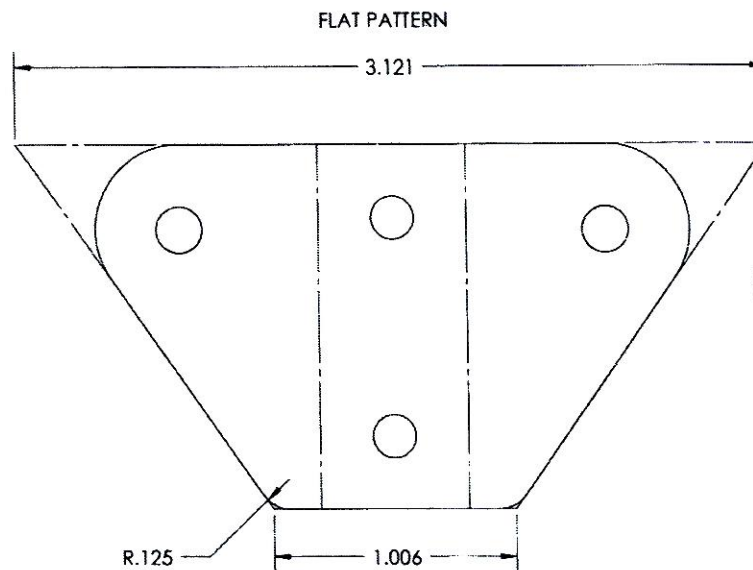
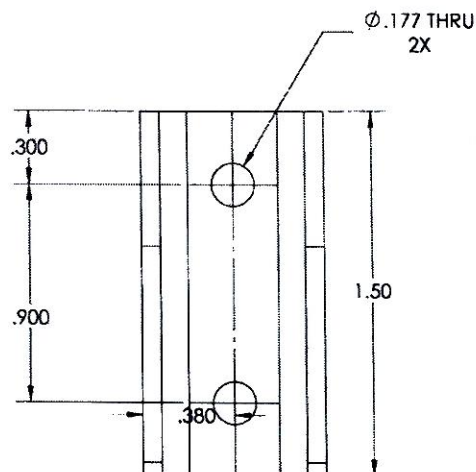
FLAT PATTERN



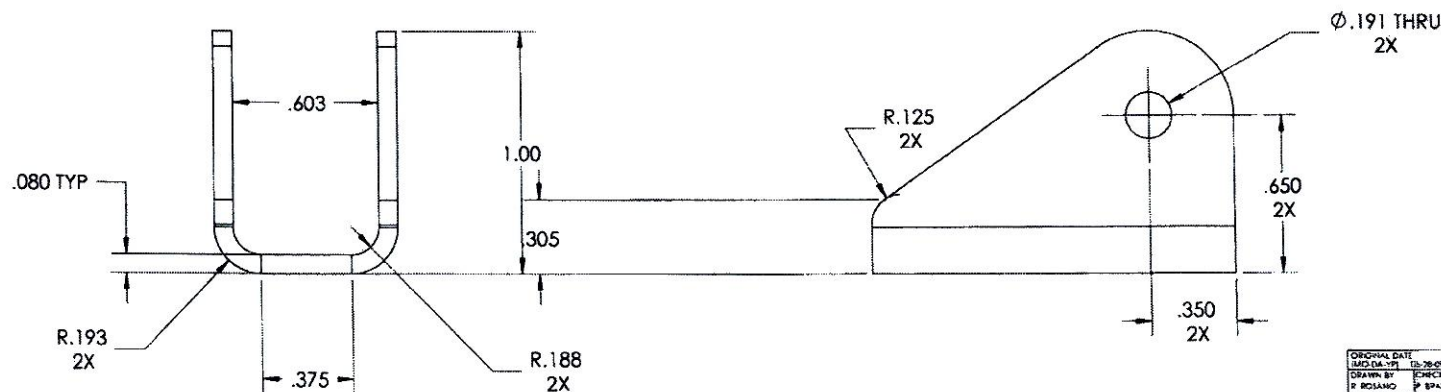
ORIGINAL DATE 10/06/98		APICAL INDUSTRIES	
DRAWN BY P. ROSANO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL P. BRAVO		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 2 PLACE DECIMALS ± .01 ANGLES ± .5°		REV B 07/02/05	REV A
SCALE: NONE		SHEET 2 OF 6	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



647.0112



ORIGINAL DATE
1/10/04
DRAWN BY
P. ROSANO
CHECKED BY
P. SPANO
DRAWING APPROVAL
P. SPANO
DATE
1/10/04
CONTRACT NO.

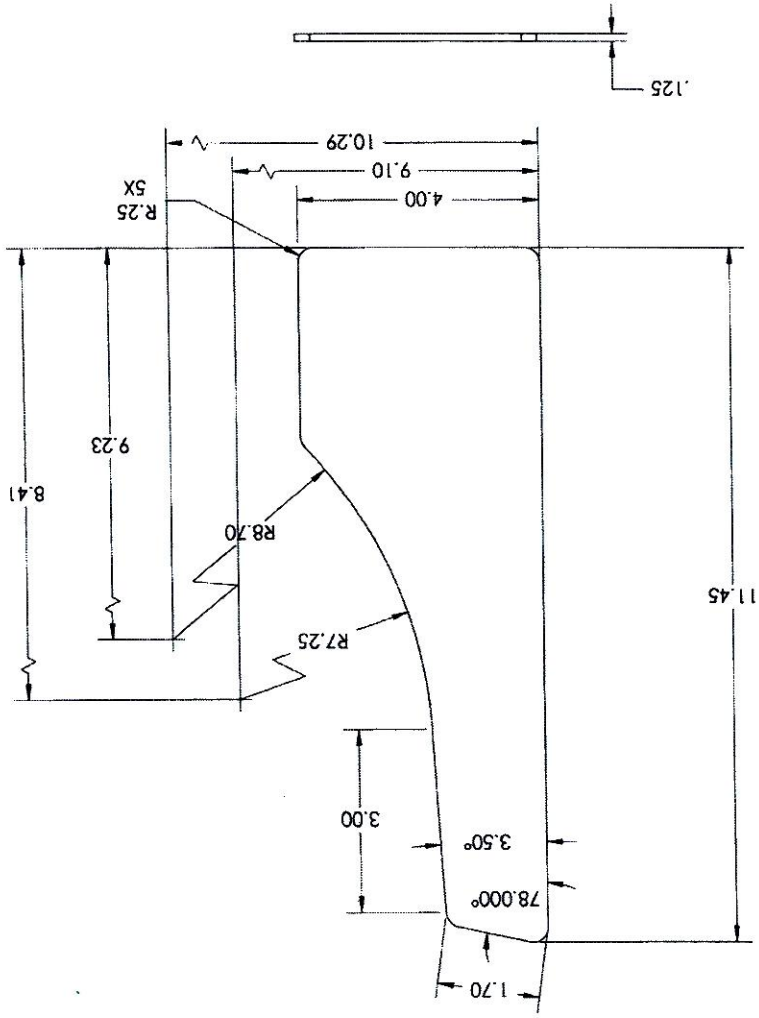
APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

SHEETMETAL

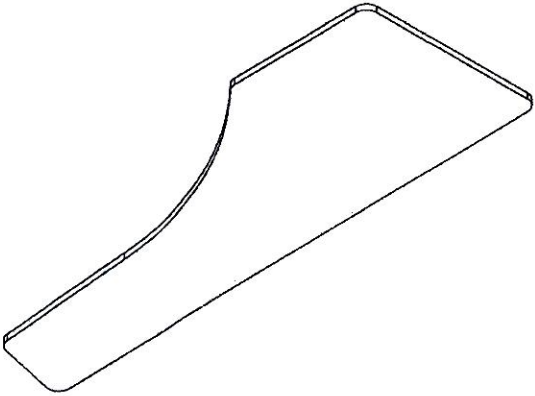
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE
3 PLACE DECIMALS ±.005
ANGLES ±.5°

REV.	DATE	DESCRIPTION	APPROVED
1	07/12/06	647.0100	A
SCALE: NONE		SHEET 3 OF 6	

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647.0113

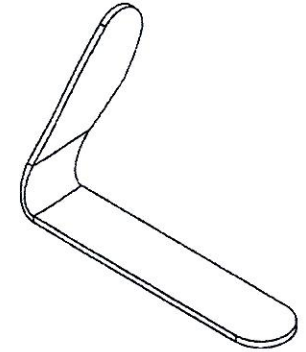
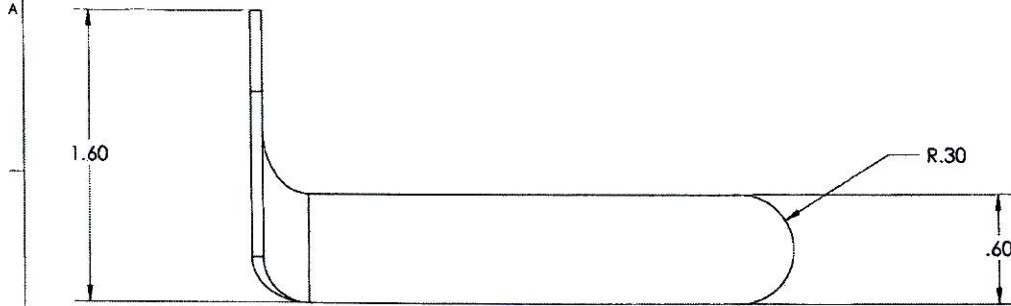


REVISIONS	DATE	APPROVED
DESCRIPTION		

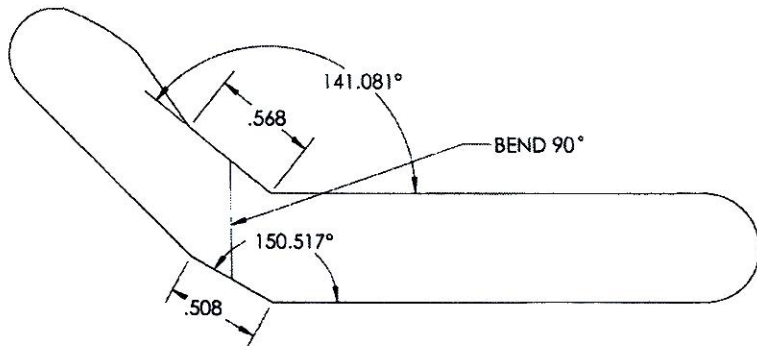
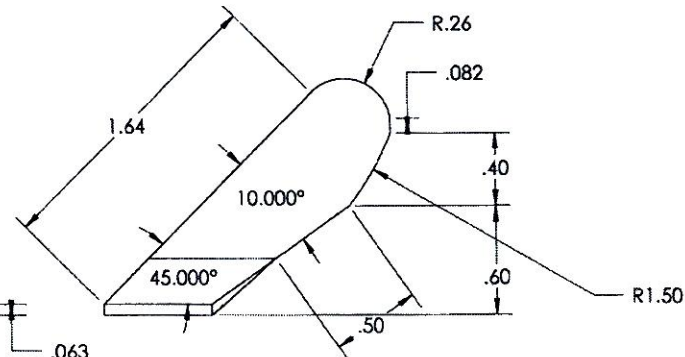
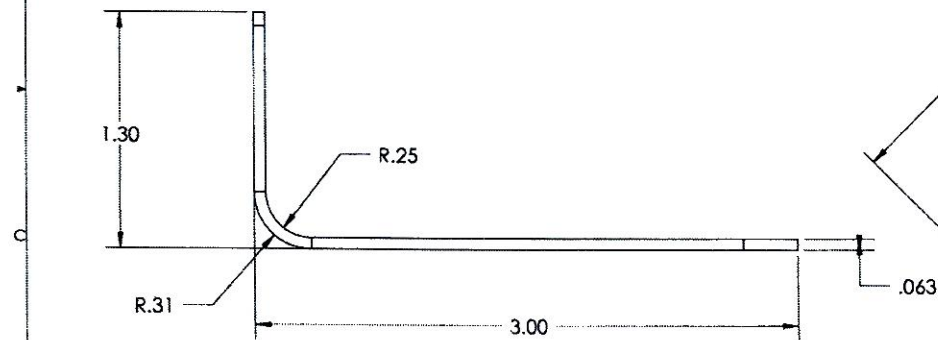
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



647.0114 SHOWN
647.0115 OPPOSITE

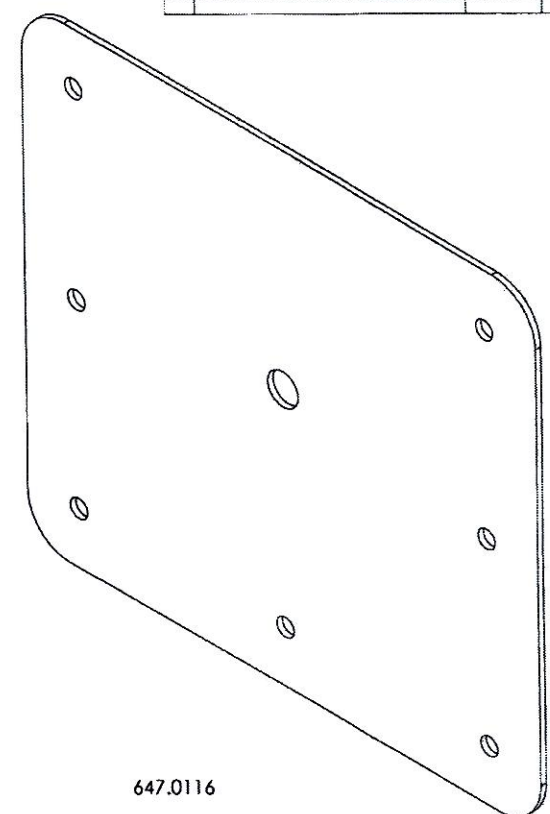
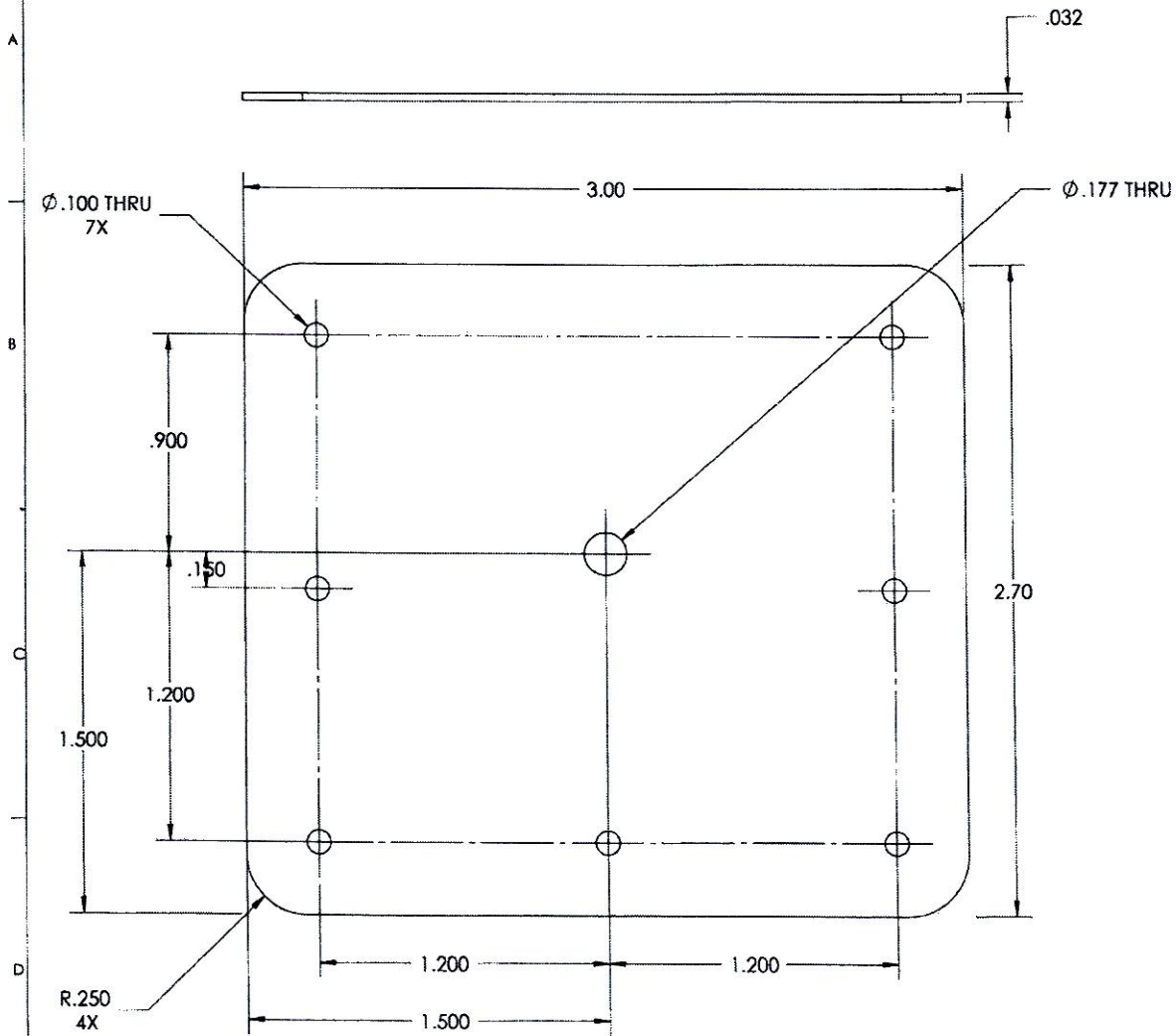


FLAT PATTERN

ORIGINAL DATE 10/24/10 05:20:00		APICAL INDUSTRIES	
DRAWN BY P. ROSANO	CHECKED P. BRAVO	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL P. BRAVO		SHEETMETAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ± .01 2 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET CODE B 07A26	DWG NO 647.0100
SCALE NONE		REV A	
SHEET 5 OF 6			

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



647.0116

ORIGINAL DATE 10/01/88		APICAL INDUSTRIES	
DRAWN BY P. ROSANO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
CHECKED BY P. BRAVO		SHEETMETAL	
DRAWING APPROVAL P. BRAVO		SCALE NONE	
CONTRACT NO.		SHEET 6 OF 6	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE 2 PLACE DECIMALS $\pm .01$ ANGLES $\pm .5^\circ$		SIZE B	REV A
CAGE CODE 07M26		DWG. NO. 647.0100	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO35239**

Purchase Order Date 2/8/2017

PO Print Date 2/8/2017

Page Number 3 of 6

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Total: \$50.00

7 155373

646.3810 BRACKET
REV. N/C

2/24/2017

11.00

\$6.55

\$72.05

Yes

2/24/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377K TYPE I CLASS N

Line Total: \$72.05

8 155367

646.3813 STRUT
BRACKET REV. N/C

2/24/2017

5.00

\$6.10

\$30.50

Yes

2/24/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377K TYPE I CLASS N

Line Total: \$30.50

9 155571

DAS
38
9-89

647.0113 STRUT
DOUBLER REV. A

2/24/2017

10.00

\$11.75

\$117.50

Yes

2/24/2017

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-PRF-23377K TYPE I CLASS N

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

2/8/2017



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912955

Date: 21-Feb-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

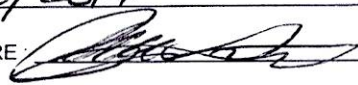
CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Primer per MIL-PRF-23377K, Type I, Class N Job: 19964 PO: PO35239 Line: 5		
8 ea	Part: 646.3719 Rev: A Doubler Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Primer per MIL-PRF-23377K, Type I, Class N Job: 19978 PO: PO35239 Line: 6		
11 ea	Part: 646.3810 Rev: N/C Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Primer per MIL-PRF-23377K, Type I, Class N Job: 20020 PO: PO35239 Line: 7		
5 ea	Part: 646.3813 Rev: N/C Strut Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Primer per MIL-PRF-23377K, Type I, Class N Job: 20127 PO: PO35239 Line: 8		
10 ea	Part: 647.0113 Rev: A Strut Doubler Hard Black Anodize per MIL-A-8625F, Type III, Class 2 Primer per MIL-PRF-23377K, Type I, Class N Job: 20237 PO: PO35239 Line: 9		
DATE: <u>21/02/2017</u>			
CERTIFIED SIGNATURE: 			
RECEIVER SIGNATURE: _____			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may			

DAS
38
9-89

SP17-02-21



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 912955

Date: 21-Feb-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms

Ship Via

Quantity

Description

be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.

CERTIFICATE OF CONFORMANCE

A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO REQUIREMENTS.

MADE IN CANADA.

6017-02-21